

FIG. 1(C)(1)

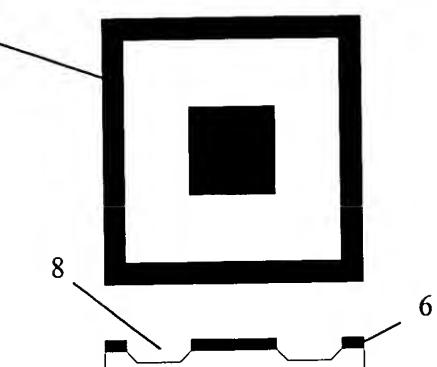


FIG. 1(C)(2)

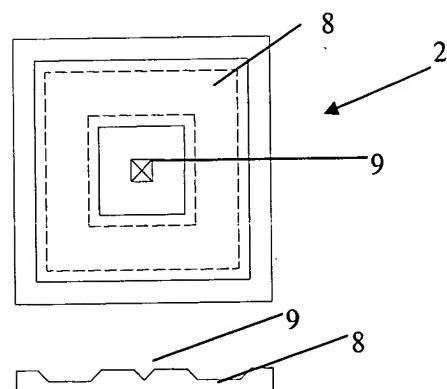


FIG. 1(D)(1)

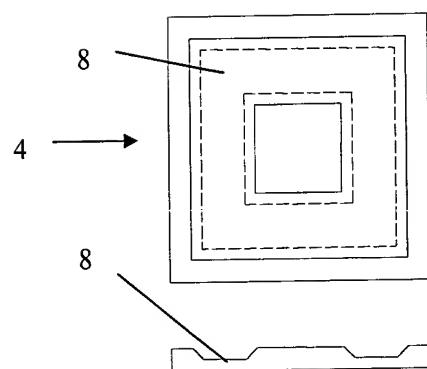
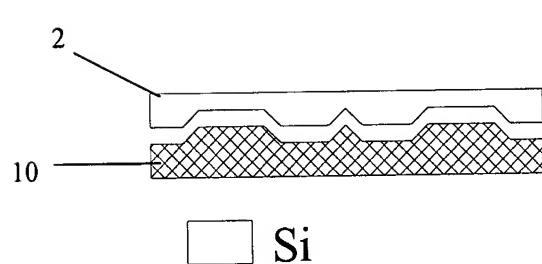


FIG. 1(D)(2)



□ Si

▨ PMMA

FIG. 1(E)(1)

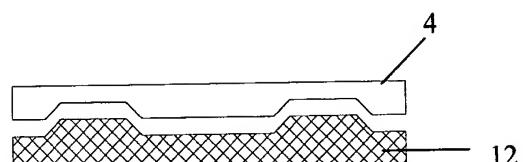


FIG. 1(E)(2)

 Metal

 PMMA

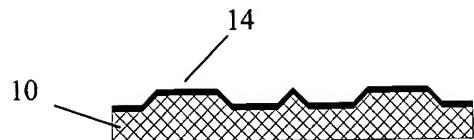


FIG. 1(F)(1)

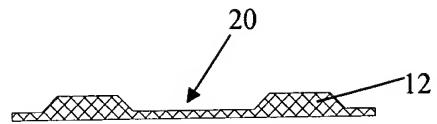


FIG. 1(F)(2)

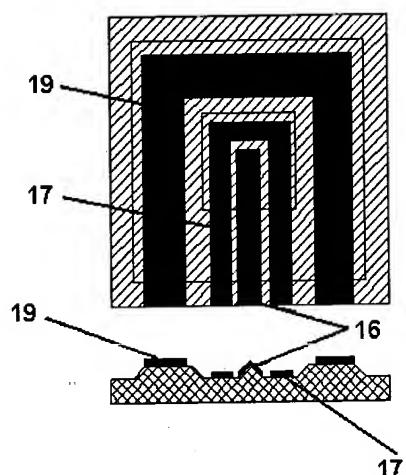


FIG. 1(G)(1)

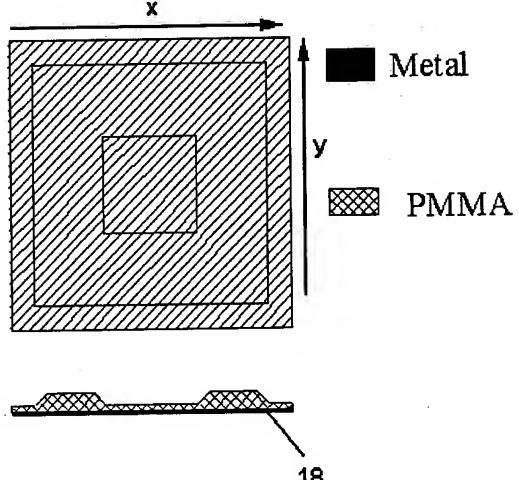


FIG. 1(G)(2)

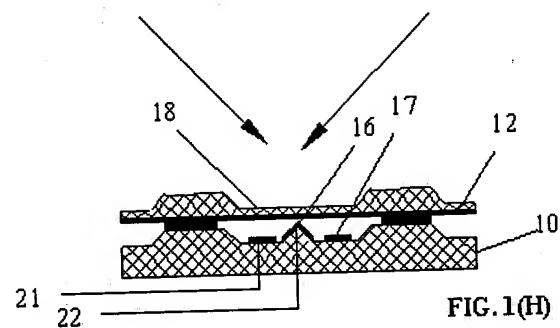


FIG. 1(H)

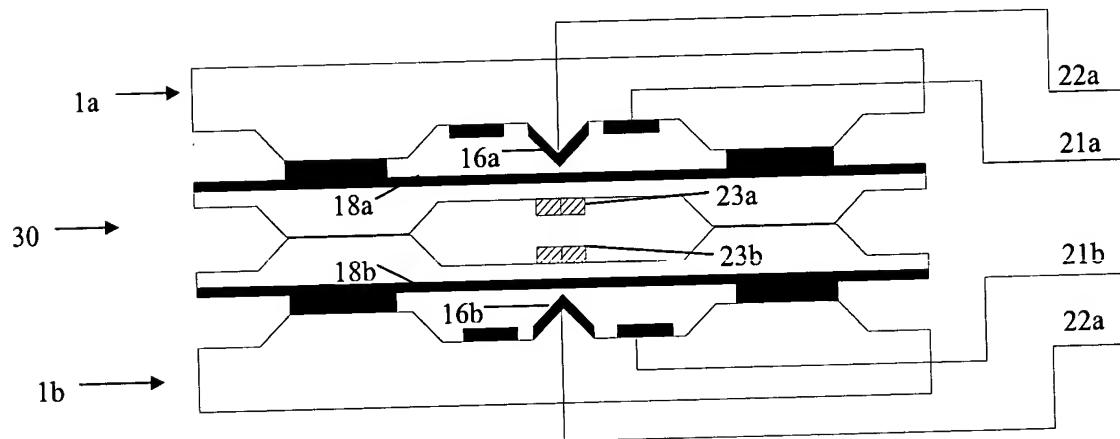


FIG. 2(A)

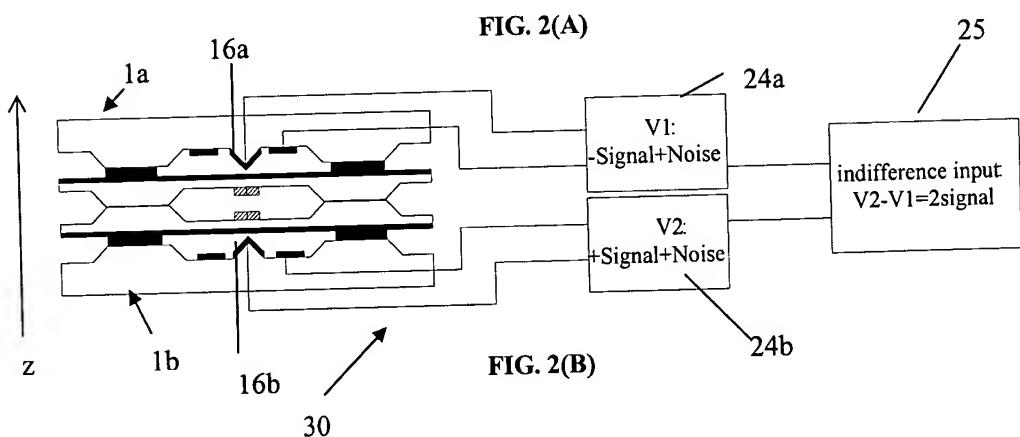


FIG. 2(B)

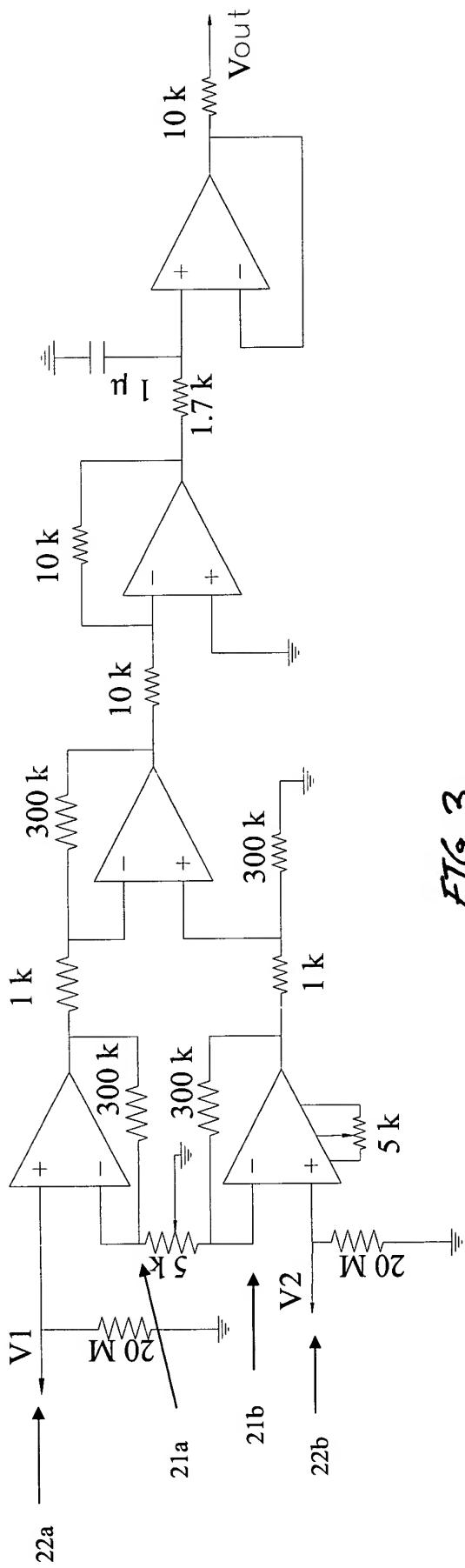
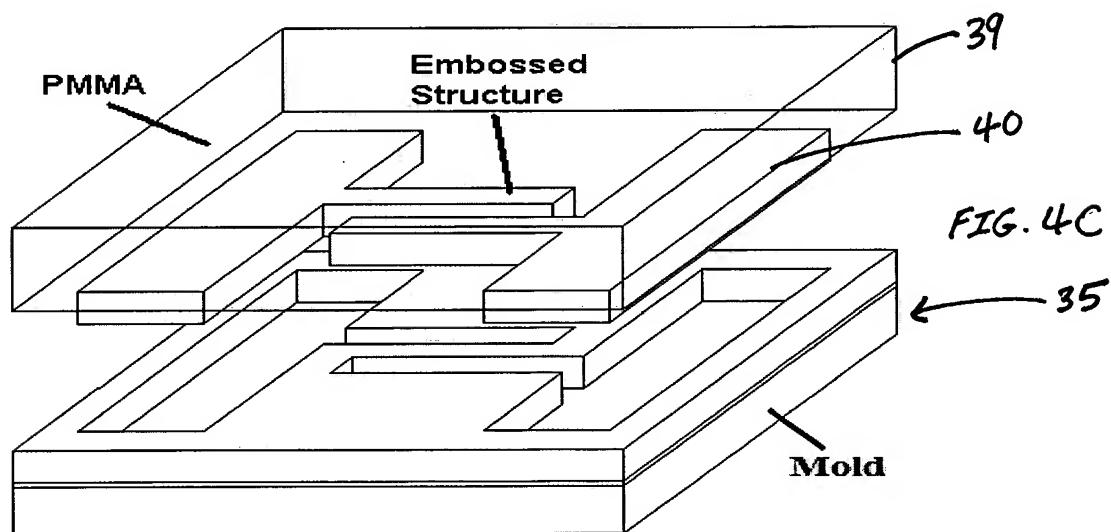
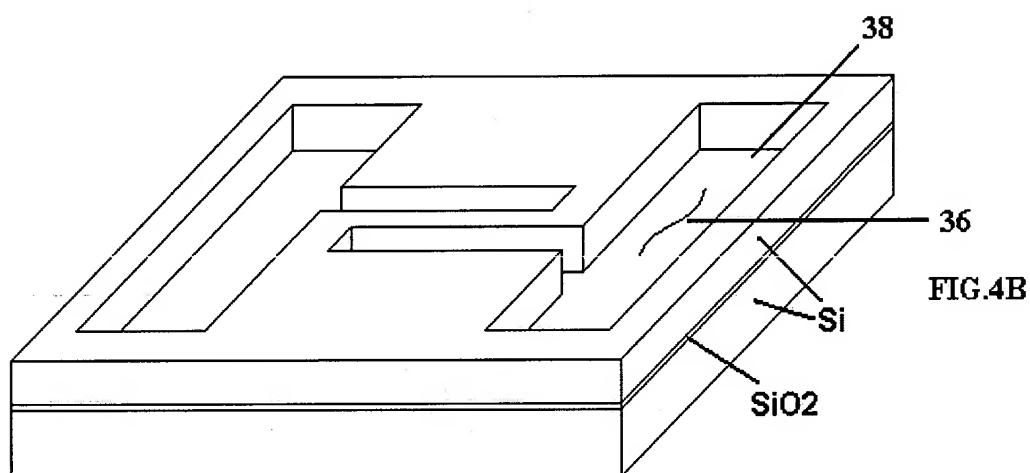
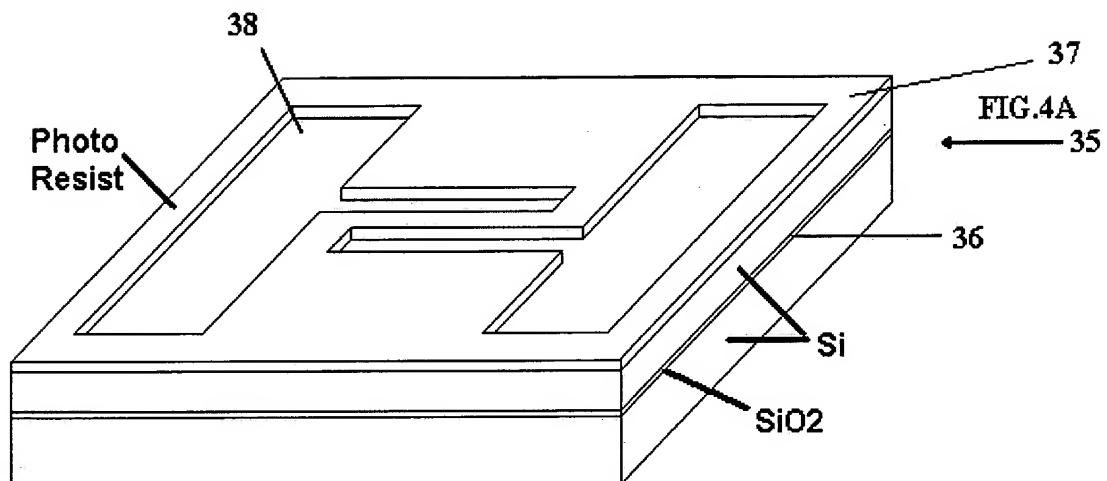
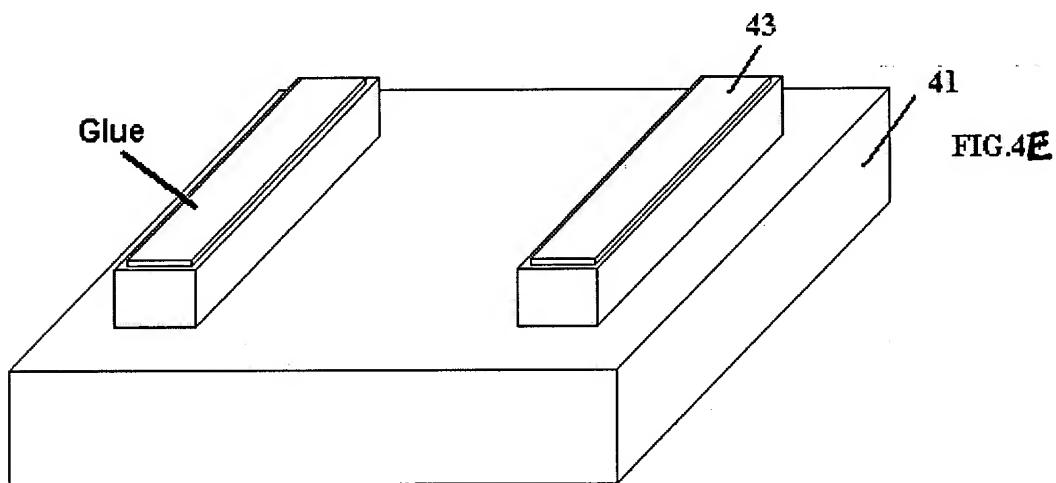
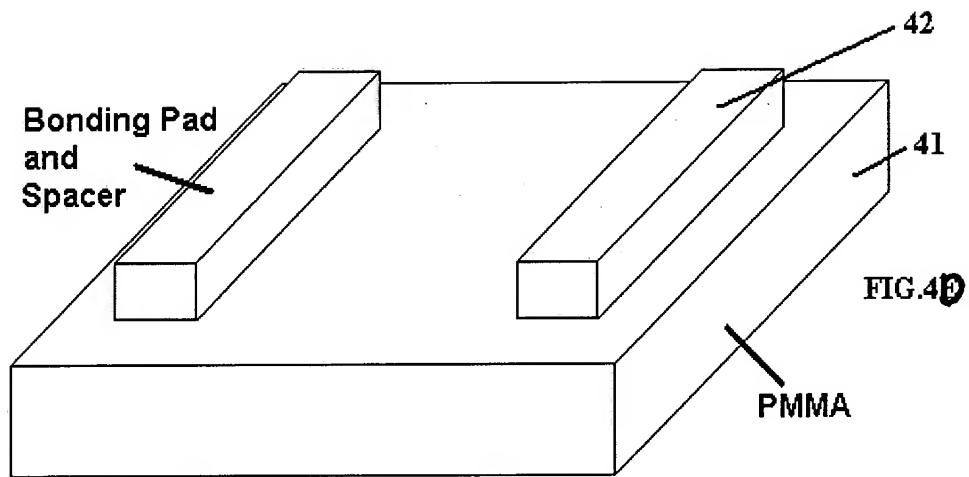
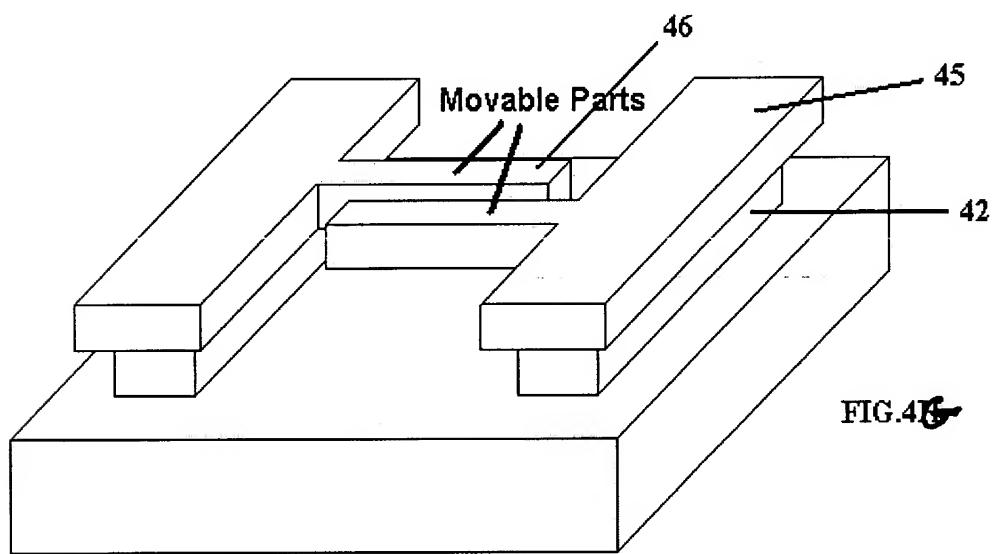
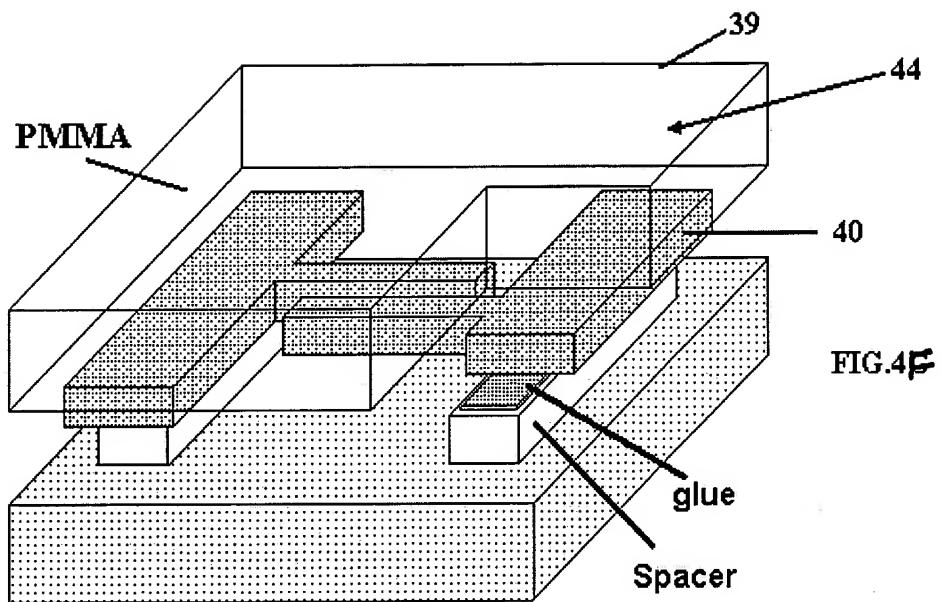


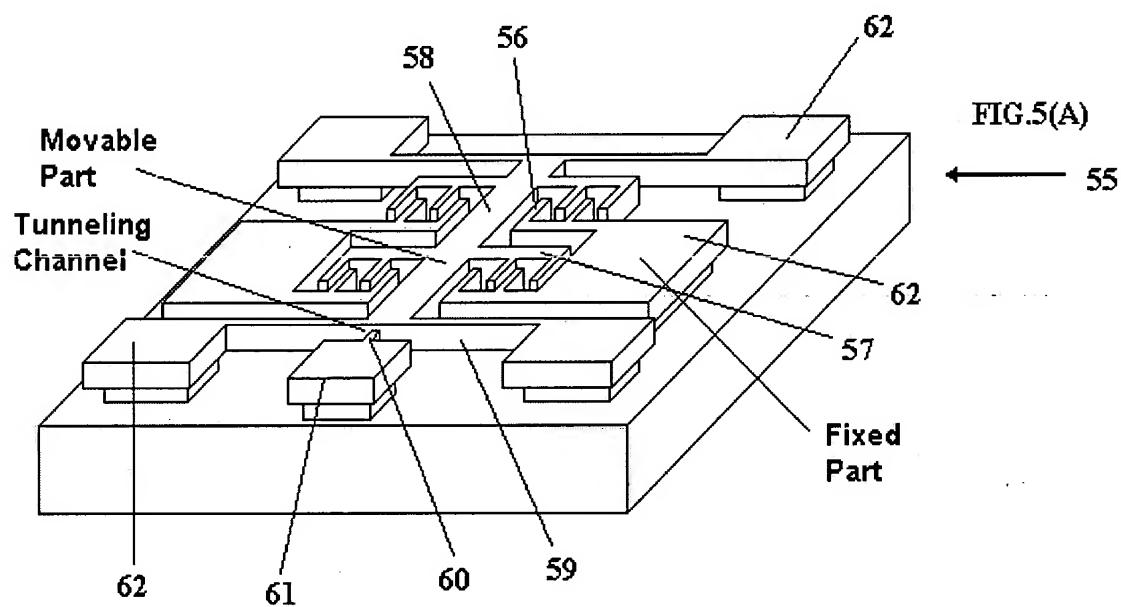
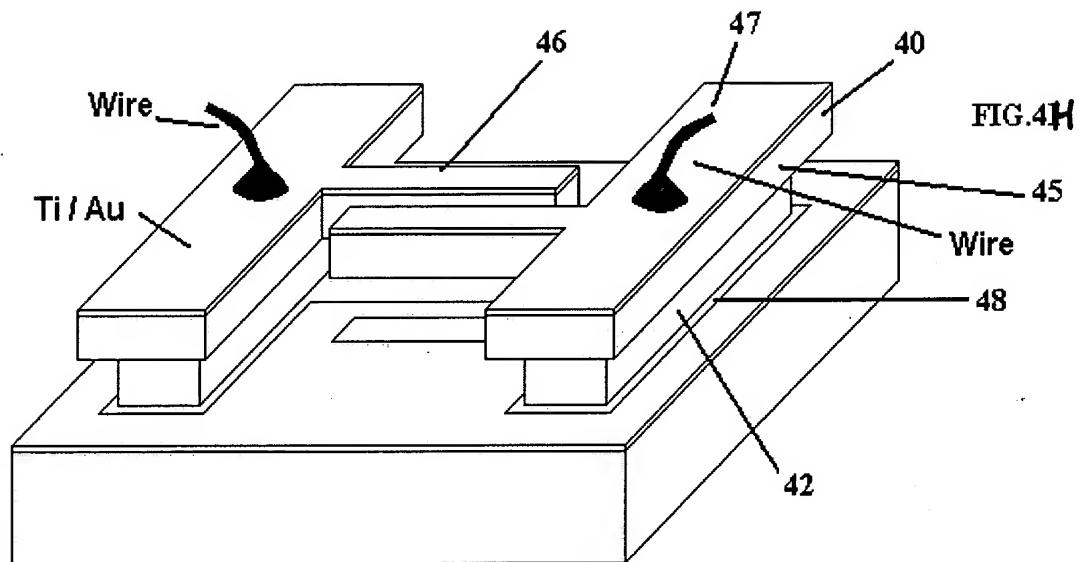
FIG. 3

Process Flow Chart Illustration









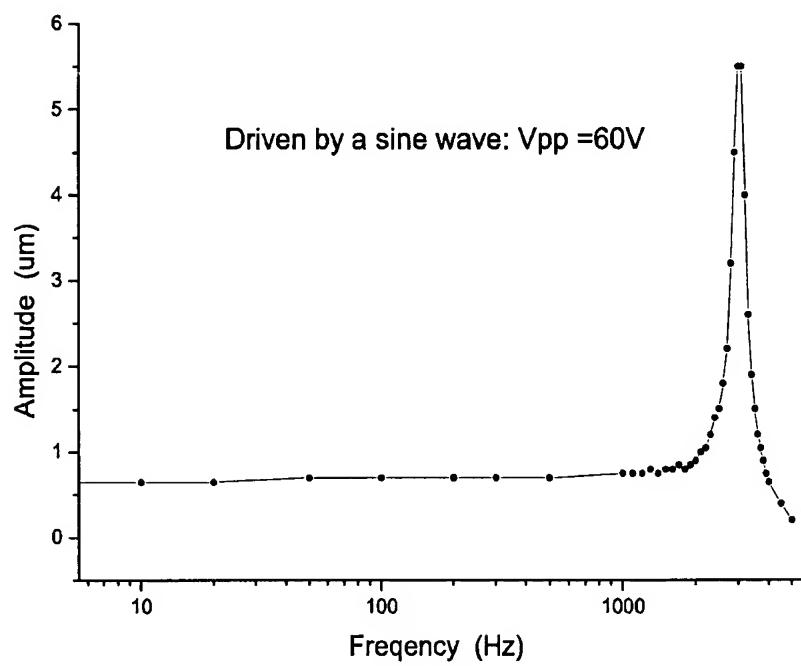
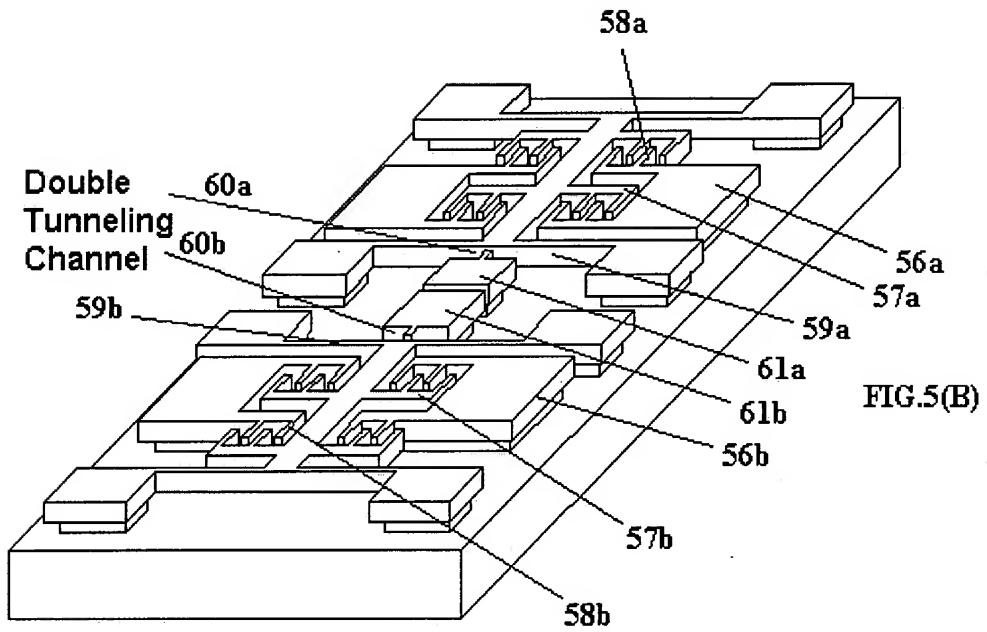
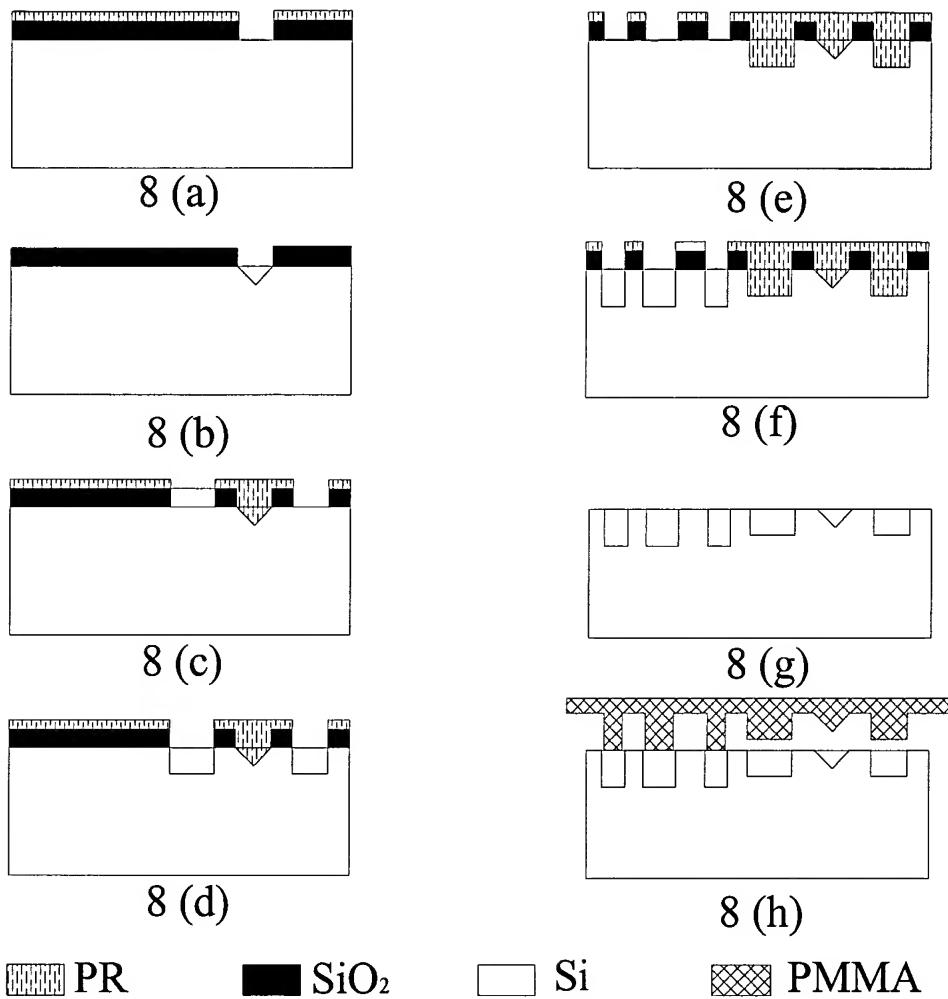
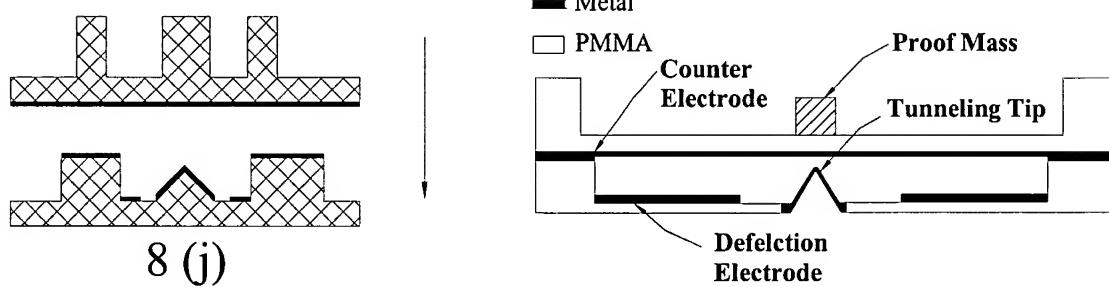


FIG.6



■ PR ■ SiO₂ □ Si ■■■ PMMA



■ Metal
 □ PMMA
 ■■■ Counter Electrode
 Proof Mass
 Tunneling Tip
 Deflection Electrode

FIG. 8 (k)
 Cross section of a membrane type PMMA-based tunneling sensor

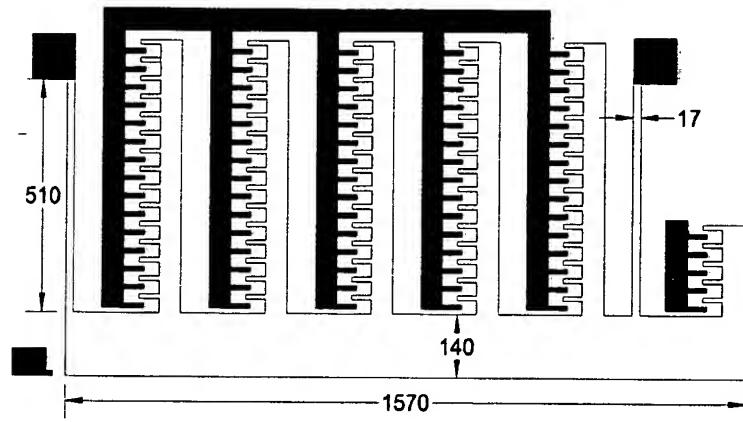


FIG 7

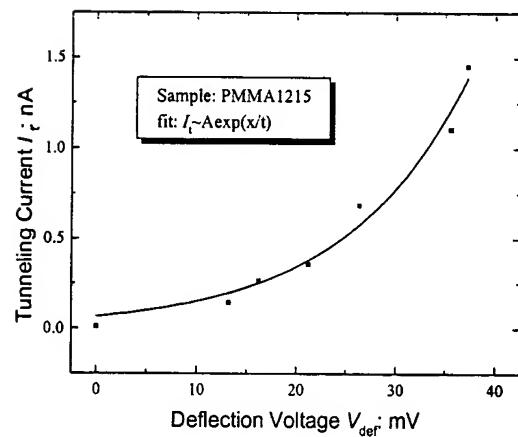


FIG. 9 The exponential relationship between
tunneling currents and applied deflection voltages